

Please add the following new claims 27-37:

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27. An alternator as defined in claim 1 wherein the amount of residual austenite is up to about 8%.

28. An alternator for vehicles comprising a rotary shaft of a rotor which is rotatably supported by a pair of ball bearings, each comprising a fixed ring and a rotary ring, on a frame having a stator, and a drive pulley which is mounted on one end of the rotary shaft projecting outward from the frame, the fixed ring having a raceway, wherein the alternator comprises at least the bearing directed toward the pulley comprising a fixed ring comprising a bearing steel containing up to about 3% of residual austenite at a radial depth of 0.1 mm from the raceway of the ring, whereby the rolling fatigue life is improved by preventing occurrence of partial structural changes or minute cracks immediately under the raceway of the fixed ring caused by vibration or impact.

29. An alternator as defined in claim 28 wherein said steel containing limited proportion of austenite has been made by subjecting steel having a higher austenite content to a sub-zero treatment.

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cont.

30. An alternator as defined in claim 28 wherein said steel containing limited proportion of austenite has been made by subjecting steel having a higher austenite content to a sub-zero treatment and a subsequent tempering treatment at a temperature of 170° to 230° C.

31. An alternator for vehicles for use in an environment in which a maximum speed of rotation is in excess of 12000 r.p.m., comprising a rotary shaft of a rotor which is rotatably supported by a pair of ball bearings, each comprising a fixed ring and a rotary ring, on a frame having a stator, and a drive pulley which is mounted on one end of the rotary shaft projecting outward from the frame, the fixed ring having a raceway, wherein the alternator comprises at least the bearing directed toward the pulley comprising a fixed ring comprising a steel containing up to about 10% of residual austenite, whereby the rolling fatigue life is improved by preventing occurrence of partial structural changes or minute cracks immediately under the raceway of the fixed ring caused by vibration or impact.

32. An alternator as defined in claim 44 wherein said steel containing limited proportion of austenite has been made by subjecting steel having a higher austenite content to a sub-zero treatment.

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33. An alternator as defined in claim 31 wherein said steel containing limited proportion of austenite has been made by subjecting steel having a higher austenite content to tempering at a temperature of 250° to 380° C.

34. An alternator as defined in claim 31 wherein said steel containing limited proportion of austenite has been made by subjecting steel having a higher austenite content to a sub-zero treatment and a subsequent tempering treatment at a temperature of 170° to 230° C.

35. An alternator as defined in claim 31 wherein said steel has been subjected to carburization hardening.

36. An alternator as defined in claim 31 wherein the amount of residual austenite is up to 6%.

37. An alternator as defined in claim 31 wherein the amount of residual austenite is up to about 8%.

REMARKS

Claims 1-4, 6, and 27-37 are pending in the application.